

Text Messaging As An Adjunct to a Career and Life Planning Class
With Undergraduate Students

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Abstract

Career decision making is a difficult process for many. Gordon & Steele (2003) found that for many students, even knowing where to begin can be a daunting process. Students' initial choices in a major or career can be unrealistic because they are often based on little knowledge about academic requirements or job relationships. Research has shown that career interventions are effective (Baker & Popowicz, 1983; Brown & Ryan Krane, 2000; Oliver & Spokane, 1988; Whiston, Brecheisen, & Stephens, 2003), and Brown and Ryan Krane have identified five key elements that contribute to effective career counseling. This study built its interventions on those elements. Students were recruited from a Career and Life Planning class offered at a large Midwestern university, and were given individualized feedback on their interest inventories and strengths. In addition, they were randomly assigned to either a text messaging group (n=23) or a non-texted group (n=29). The texted group received 3-5 text messages each work week for one month about strengths, career assessment results, and information about the world of work in hopes that daily reminders in the form of text messages would aid in the process of students making informed and adaptive career decisions, with increased levels of hope, occupational engagement, strengths awareness, and career decision self efficacy. The study was designed to marry a form of communication that college students engage in on a daily basis, text messaging, with delivering sound career information. Results showed support overall for the course and feedback, but the texted students showed no more gains than did the non-texted group.

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Chapter I

Introduction

Frank Parsons (1909) is widely considered to be the father of Vocational Psychology with his work based on finding suitable vocations or employment by aligning the inherent traits or skills of the worker with the appropriate work environment. This trait factor approach resulted in workers, based on their self characteristics, being fitted to a specific type of work. In addition, Parsons believed that it was better to choose a vocation rather than job hunt, and that for the most part a worker needs self knowledge, occupational knowledge, and decision making skills (Niles & Harris Bowsbey, 2002).

Parsons developed his approach largely based on the success of his work with adolescents in Boston and what he articulated to be “true reasoning” that only occurs by adopting a systematic approach to occupational decision making. While this trait factor approach has been successful within the last century, the world of work has dramatically changed from a predictable, emerging industrial society to an ever changing marketplace and unpredictable job climate in which adaptability is necessary. In addition, we now understand that decision making is not a cut and dry cognitive process but rather a complicated and intricate dance between conscious and unconscious processes as well as intuitive and automatic processing (Krieshok, 1998, 2001, Krieshok, Black & McKay, 2009; Nisbett & Wilson, 1977; Phillips, 1997; Tversky & Khaneman, 2003).

Armed with research and empirical understanding, we now are at a crossroads in which we must use science more than ever to inform our practice in career counseling. With the pervasive use of technology in everyday life from email to social media to texting, psychology can have an important impact in people’s lives at varying levels. Technology brings new

opportunities for advocacy but also new challenges (Clay, 2010). In addition, the world of Frank Parsons is no longer the world in which we find ourselves. We no longer choose one vocation for our lifetime, but are required to be flexible and adaptable to find our place within the world of work many times throughout our working years as adults. Our role within work has changed but so has the world of work. The changes resulting from the growth of technology are having complex effects in our everyday lives (Gore, Leuwerke, & Krumboltz, 2002). Our occupations are changing, expanding, and even becoming obsolete in today's world. Technology has become an integral part of virtually every aspect of human experience. High speed telecommunications has opened new possibilities for employment but also has called for a new breed of employees that must be flexible, adaptable and well versed in new technologies (Hesketh & Bochner, 1994). Technology may be the driving force behind the globalization of our economy. In contrast to traditional industry where changes were slow and predictable over time, modern industry emphasizes quick changes and adaptations to insure continued success in business (Sennet, 1998). Grantham (2000) discussed ways that new technology changes have affected how employees interact with one another in which coworker interaction is kept to mostly impersonal, electronic exchanges versus face to face contact. These new roles in which coworkers interact electronically have vast effects on how we interact in the world of work but also as a community.

Early approaches to career development entailed testing clients, providing them with occupational information, and then matching them with occupational choices that offered a reasonable chance for occupational success (Niles & Harris Bowlsbey, 2002). People chose one occupation for life and then 30 years later, retired from that occupation. Today it is likely that we will be required to change seven or more jobs or occupations in our lifetime. Long gone are the occupations in which job security and retirement parties at age 65 are the norm but rather the

novel and unlikely event in life. Career development is crucial now more than ever in helping people to find satisfying work throughout the life span.

Career development is a lifelong process. At different stages of life, individuals focus on work, family, and being a contributing member of society. Super (1969) conceptualized a theoretical framework for how the individual proceeds throughout life to understand the role and maturity of work in our lives. Super claimed that careers develop and that at different stages the individual needs certain interventions to mature vocationally. Super's "life-span, life space" theory is primarily developmental but he labeled it as a "differential-developmental-social-phenomenological career theory" (Super, 1969, p.2). His theory illuminates the main tenets of career development which he stated were 1) life span, 2) life space and 3) self-concept. His theory built upon the work of numerous psychologists and sociologists but expanded to include 14 assumptions that he proposed were necessary in order to understand career development. Among those assumptions, Super stated that career development is essentially developing and implementing occupational self concepts (Super, 1990). In addition, one assumption that he proposed was that career maturity is largely a hypothetical construct and that as we develop through the life stages we can be guided by facilitating the maturing of abilities and interests and also be aided in reality testing and in the development of self concepts.

Gottfredson's (1996) research illuminated that, traditionally career development interventions occurred primarily during this crystallization phase when people are clarifying their self concepts. She advocated for career development interventions to occur earlier and for younger groups of people, primarily in the form of career education programs. Gottfredson's theory of circumscription and compromise emphasizes that "career choice is an attempt to place oneself in the broader social order" (p.181) and that occupational alternatives should be

explored. More importantly, young people should also explore the role of sex type, social class, ability and vocational interest when considering occupations. Her research is important to include because of the necessity to teach younger people about the world of work and how there may be more than one option for an individual to consider when choosing an occupation.

Krumboltz (2009), along with his contribution of the theory of Planned Happenstance, developed the learning theory of career counseling (LTCC) to help counselors construct effective career counseling interventions to assist their clients with their career concerns. Krumboltz suggested that clients seek career counseling when they have 1) the absence of a goal or a career indecision, 2) expressed feeling of concern about high aspirations or unrealism or 3) there is a conflict between equally appropriate alternatives or multipotentiality (Krumboltz & Thoresen, 1969). The learning theory of career counseling when applied can help clients to develop more accurate self observation generalizations, acquire more accurate worldview assumptions, learn new task approach skills, and take appropriate career related actions. In addition, Mitchell and Krumboltz (1996) stated that career counselors need to be able to help their clients cope with expanding their capabilities and interests, prepare for changing work tasks--not just assuming careers will remain stable, be empowered to take action, and career counselors will need to play a major role in dealing with all career problems, not just career selection.

Along with preparation and research, chance also plays a factor in career counseling. Krumboltz's theory of Planned Happenstance highlighted the importance of the x factor or the degree of chance that can occur in finding suitable work. Mitchell, Levin, & Krumboltz (1999) believed that traditional career counseling is still perceived as a process designed to eliminate chance from career decision making. In addition, they felt that career counseling interventions were no longer sufficient in preparing clients to respond to career uncertainties and with the

world of work shifting, unplanned events are inevitable but also can be desirable. Unplanned events can be opportunities for learning. “Chance plays an important role in everyone’s career. On any given day no one knows for sure what people will be met, who will call, or what letters or email messages will arrive” (Mitchell, Levin, & Krumboltz, 1999, p.116). According to Betsworth & Hansen (1996), most people agree that chance, luck or happenstance has played an important part in their careers. By embracing a degree of being uncertain, clients can learn to see chance events as opportunities for learning.

Holland (1973) was also a major contributor to the area of career development. His RIASEC model helped to describe individual differences and characterize work environments by six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Holland came from a long line of career theorists that hoped to help people based on their interests to expand their understanding of themselves, identify interests not previously known to the client, and describe individual differences in personality types. Holland came up with a theory of types and person-environment interactions to help link different personality characteristics with different job titles (Holland, 1973). His theory was based on four assumptions:

1. In our culture, most persons can be categorized as one of six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.
2. There are six kinds of environments: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional.
3. People search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take on agreeable problems and roles.
4. A person's behavior is determined by an interaction between his or her personality and the characteristics of his or her environment. (Holland, 1973, p.2)

Holland stated that career interests are an expression of a person's personality (Holland, 1973). His theory included six types (Realistic, Investigative, Artistic, Enterprising, Social and Conventional) that people are most likely to reflect in their own personality types and that to a certain extent, these types are expressed as preferences for leisure, values, self efficacy, school subjects, and work.

Typically, in a college career center, interests are assessed as a starting point from which the career counseling process can build to assist the student in understanding more about what he or she is interested in with the hope of generating many different options to explore. Interests are not typically crystallized at age 18, but by mid- twenties and thirties interests become pretty stable, with our preferences leading us to find suitable work environments, avocational activities and leisure.

Career Development of College Students

College students are at a crossroads developmentally. They have the daunting task of growing and maturing into adults as well as narrowing down different occupational possibilities that they will rely on throughout their adulthood. In a 25 year longitudinal study of first year college students, Gordon & Steele (2003) found that 1st year students have grown slightly more anxious about choosing a major. Students' initial choices of major or career are often unrealistic because of lack of information on the world of work, academic requirements, and lack of awareness of what is required in various job positions. The career exploration stage that Super (1963) theorized spans from the age of 14 to 24 years of age primarily focuses on planning for the future. Future planning essentially involves addressing the tasks of crystallizing and specifying occupational preferences, in other words, figuring out what you like and don't like about different types of work. Crystallizing requires people to clarify the type of work they enjoy

and then implementing that choice in order to get started and begin working in one's chosen field.

Super contended that we are all unique in how we assign meaning to our individual roles and the role of work in our lives. This picture of self concept, defined by Super as a "picture of the self in some role, situation, or position, performing some set of functions, or in some web of relationships" (Super, 1963, p. 18), contributes to how we will develop over a lifetime in our relationships to work and the different life roles that we will play as individuals.

For many college students, learning how to gather information on occupations and their individual work preferences, making career decisions, and engaging in career exploration and planning are all new skills that are being developed and acquired. According to Super (1955), individuals vary in their readiness to make educational and vocational choices. Career choice readiness means that an individual has sufficiently developed the career development attitudes, coping behaviors, and cognitions needed to crystallize a stable vocational identity and to specify a realistic occupational choice (Toman & Savickas, 1997). Toman & Savickas state that individuals who possess a readiness for career choice, as evidenced in their career development attitudes and competence for making occupational choices, are better able to cope with the developmental tasks of crystallization and specification. Career indecision is prevalent among college students and is frequently experienced as a burden and associated with feelings of anxiety and lowered self esteem (Betz & Serling, 1993). De Pater, Van Vianen, Fischer, & Van Ginkel (2009) questioned whether young people need to actually be as decided upon a career given that conscious decision making is a less optimal strategy for making career decisions. They argued that given the inadequacies of traditional career theories, we need to adjust our

ways of thinking to include a more future oriented, career adaptable way of being when approaching short and long term career goals.

Purpose of the Study

The purpose of this study was to determine whether generic and individualized feedback on strengths and interests of students would increase their scores from pretest to posttest on measures of Strengths Awareness, Hope, Occupational Engagement and Career Decision Self Efficacy. In addition, by adding 3-5 text messages per work week about career information, strengths and interests, might we augment scores from pretesting to posttesting leading to greater career decision self efficacy, increased levels of hope, strengths awareness, and occupational engagement. By using a form of communication to reach students, much like emailing, daily texts or reminders about how to use one's strengths, interests and personality type, texting career results was investigated in order to help students better engage in the career counseling process and ultimately have more confidence and self awareness to help support their decision-making process.

Chapter II

Review of Literature

Career decision making and current trends in career counseling services form the basis for this study. In addition, the theoretical underpinnings of this study are anchored in social cognitive career theory, occupational engagement, and hope theory, to form the basis for creating an intervention in which career services might be enhanced by text messaging college students about career information and career decision making. Text messaging is a useful tool that college students are familiar with and use on a daily basis. By creating a career intervention that used the novel form of texting to reach clients, hope, occupational engagement, and strengths were looked at as possible factors or key ingredients to include in efficacious career interventions.

Planning has long been a part of career decision making. However, Krumboltz (1996) advocated for career counseling to be an opportunity for education rather than strictly decision making. Savickas (1997) believed that career counselors must help the client to develop into the person they want to be rather than to simply follow the “linear continuum of developmental tasks” (p.254). By being adaptable, Savickas hoped that the “readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by changes in work and working conditions” would become the focus of career counseling (p.254). Adding technology to the ever changing world of work shifts the career decision making process and increases our need to be adaptable in the workplace. The following review of literature highlights current research and theoretical grounding for this study.

Career Decision-Making

Young adults have more freedom of choice and the freedom to fashion their career than their parents did as young adults (De Pater, Van Vianen, Fischer, & Van Ginkel, 2009). Young people in Western societies are no longer constrained to do what their parents did for work and college students often find they have more options today than have ever been available. However, with this wide range of possibility and choice, comes a stultifying process of making the “right decision” and one that will be the right fit. This seems like a luxury but may not feel like one. Decision making is a difficult process. Decisions regarding ones vocation and career usually have to be made under conditions of great uncertainty. Krumboltz (1992) has long been an advocate for transforming uncertainty and indecision into possibility. Calling ‘indecision’ ‘open-mindedness’ instead, can help a client presenting for career counseling to see the learning opportunities and embrace the possible opportunities that can come from being undecided.

An open minded person is in the middle of what was and what will be. Being undecided means that all the data are not in. the person has a chance to develop the skill of asking questions just to know, not necessarily to do anything about the answer. The person has the opportunity to be curious, to be guided by “what would happen if” questions and to explore options, not to be bound to a plan that may be obsolete before it is formulated (Mitchell, Levin, & Krumboltz, 1999, p.117).

In addition, ever-evolving technology, changes in the job market, and the transition to a global economy are some of the probable reasons for the complexity of making career decisions (Smith & Gast, 1998). In one study of first year medical students, Borges (2007) found that an exploratory behavioral activity course in which students engaged in an ambulatory care course resulted in higher levels of career uncertainty. Given that medical students have over 100

specialties from which to choose and form a career, the exploration process in this case led to more career indecision. Decision making is a daunting task. In other studies, however, career decision making self efficacy increased for students, specifically in the areas of obtaining occupational information, setting career goals, and career planning, after they engaged in a university career development course (Reese & Miller, 2006).

There are many factors that contribute to career undecidedness and apprehension for college students in picking a major and eventually choosing a career path. Gordon & Steele (2003) found that over the past 25 years, students are actually more anxious today about choosing a major than they have been in the past. Students' initial choices can be unrealistic because they are often based on little knowledge about academic requirements or major and job requirements. Other factors that contribute to the difficulty in choosing or staying in a major or career path include poor high school preparation, poor academic performance in a subject required for a major or career, inaccurate information sources—such as from entertainment television or peers, and uninformed parents (Gordon & Steele, 2003; Ringer & Dodd, 1999). Gordon (1984) found that additional factors could complicate these effects by confounding the career decision making process such as students feeling pressured by the school administration or parents, may not choose then to spend time exploring other possibilities. Pressure builds for college students especially if time and money have been spent at an institution and a concrete decision must be made in order to go on and complete one's education.

Krumboltz's (1996) Planned Happenstance theory states that exploration generates chance opportunities for increasing the quality of life, and skills to enable people to seize opportunities. Blustein (1997) also concluded that career exploration is a way for people to express their natural curiosity and that the benefits of being curious can cross over into other

domains in life. Career exploration, according to Krumboltz, can lead to greater curiosity, persistence, flexibility, optimism, and risk taking. Career exploration was the basis for this study so that new and unique ways to reach students were explored in the hopes of affecting change.

Current Practices in Career Counseling

Standard protocol in career counseling centers often includes the use of interest inventories such as the Strong Interest Inventory (SII), as a basic tool for assisting clients to understand their interests. Interest inventories provide a springboard for career counseling to take place so that clients are helped to understand their interests and thus helped to stimulate discussion about different options for occupations and potentially satisfying avocational interests such as volunteering or new hobbies. However, there has been some research conducted with college students that indicates very little is retained from sessions strictly about assessment results from interest inventories (Hansen, Kozberg & Goranson, 1994; Gore 2006). Other research has indicated however that career interventions including interest inventory interpretations, can lead to greater satisfaction with career choices, expanded career alternatives and requests for more occupational information (Toman & Savickas, 1997).

Brown and Ryan Krane (2000) stated that the important goals of career counseling are helping people make goal congruent work or career choices that will allow them to experience work, career, and life satisfaction in a changing society. In considering effective career counseling interventions, they identified five key elements that contribute to gains in career decidedness and maturity within the career counseling process. Gathered from meta-analyses conducted by Oliver and Spokane (1988) and updated by Whiston, Sexton, & Lasoff (1998), in which 62 studies of career interventions were analyzed, findings suggested five tenets for effective career intervention outcomes including written exercises, individualized interpretations

and feedback, information on the world of work, modeling, and attention to building support. Overall it appears that career intervention is better than the absence of career intervention with the effect size being strong ($d=.85$).

Written exercises are defined as exercises that encourage clients to become more thoughtful and to record their reflections about the career development process via journaling, diaries, logs or workbooks. Through the process of writing, people are more able to clarify and plan for implementing career and life goals as well as help clients to gain a more accurate understanding of occupational possibilities. Individualized interpretations and feedback involves one-to-one communication between counselor and client to inform the client of career assessment results and the clarification of vocational issues and goals within the career planning and decision making process. Information on the world of work provides practical information about the earnings, opportunities, job outlook, training requirements and advancement opportunities for a variety of career fields and jobs. This information can be disseminated via individualized, group or computer based methods. Modeling involves showing the client that success is possible within the process of career exploration, decision making, and implementation. Facilitator's disclosures of Holland code type, video or film presentation all equally appear to be effective. Finally, attention to building support includes helping clients to build bridges of support so that they may draw on others for help. Specific support related interventions can range from including your parents or significant others in the career planning process or facilitators familiar with cultural contexts in which the clients live may be of help. It is imperative that counselors employ interventions that assist the client in building support for their plans. In this way, perceived barriers have less effect upon the client and the client draws on strengths rather than weaknesses.

Krumboltz (1996) theorized that there are two categories of career development interventions: 1) developmental/preventive and 2) targeted/remedial. Developmental and preventive interventions include career education programs, school to work initiatives, job club programs, study materials and simulation. These types of interventions facilitate the acquisition of accurate self and occupational information and the use of this information in the career decision making process. Learning through doing is emphasized such as on the job shadowing or internships. Targeted and remedial interventions focus primarily on goal clarification, cognitive restructuring, a cognitive rehearsal, narrative analysis, role-playing, humor and desensitization (Krumboltz, 1996, pp. 66-72). Krumboltz and Baker (1973) identified eight steps in the career counseling process:

1. Defining the problem and the client's goals
2. Agreeing mutually to achieve counseling goals
3. Generating alternative problem solutions
4. Collecting information about the alternatives
5. Examining the consequences of the alternatives
6. Revaluing goals, alternatives, and consequences
7. Making the decision or tentatively selecting an alternative contingent upon new developments and new opportunities
8. Generalizing the decision making process to new problems (p. 238-283).

Savickas (2000) contended that revisions to current career theories and vocational strategies will be necessary to help individuals navigate the postmodern information age. Savickas supported the idea that career should become more personal and self directed. Richardson (2007) believed that a paradigm shift is in order to assist clients in identifying

personal measures of success and shifts in intentional responses to one's social context. In other words, instead of matching a set of interests or personality to a job or grouping of jobs, there should be more emphasis placed upon how the individual constructs their world and the place that they find success and meaning in their work. Furthermore, there are numerous advantages to embracing a social constructivist approach in that they are more likely to be holistic, person centered, time sensitive, and more inclusive of those who do not fit the middle class notion of career. Constructivist approaches advance the discipline by helping career practitioners to understand the meaning of work in people's lives while attending to cultural, economic and social influences (Metz & Guichard, 2009). Current career practices were examined to provide a roadmap of best practices as well as deficits where this study might add more empirical support to novel career interventions using text messaging.

Career Development Courses on College Campuses

Courses that promote student career development on college and university campuses have been popular for the last 25 years and are increasing in popularity (Smith, Myers, & Hensley, 2002). There is evidence that students who complete a career course are more likely to persist in their education (Folsom, Peterson, Reardon, & Mann, 2001; Troyer & Rasmussen, 2003). Thomas and McDaniel (2004) found that students who completed a career planning course had increased knowledge of career options and confidence in their ability to make career decisions. In addition, career courses have been found to be helpful for improving dysfunctional career thoughts, career decision-making and career maturity (Davis & Horne, 1986; Garis & Niles, 1990; Reed, Reardon, Lenz, & Leierer, 2001).

Reese & Miller (2006) investigated the effects of a career development course on career decision making self efficacy. They hypothesized that students completing the career course

would show significant gains in career decision making self efficacy as compared to a control group. Their findings in fact supported their hypothesis in that the students who took the course had larger gains in self efficacy, in particular in the areas of obtaining occupational information, setting career goals, and career planning. Fouad, Cotter, & Kantamneni (2009) examined the effects of a career course on college students' career decision-making, especially how career exploration affected individuals' career decision making difficulties, career decision-making self efficacy, and perception of educational and occupational barriers. Their predictions were that by completing the career exploration course, students' career decision making self efficacy would increase. What the researchers found was that career decision making difficulties decreased, career decision making self efficacy increased, but students' overall perceptions of educational and occupational barriers did not significantly decrease.

Lepre (2007) examined the effects of persuasive messaging, written in the form of a college student newspaper column on undecided students' intent to seek career counseling. According to Lepre, exposing participants to a persuasive message can have an impact upon changing attitudes and behaviors. The researcher used three different types of messages to see which would be more efficacious in getting students to seek out career services. She used a positive persuasive message that was a positive appeal and linked the behavior of signing up for a career counseling workshop with positive consequences, including reducing career plan confusion, not wasting money on the wrong major, and creating a support network. The second format was called a negative message and its negative appeal was linked to the behavior of not signing up for a career counseling workshop with negative consequences, such as remaining confused and overwhelmed, wasting money on classes, and not having a sense of confidence in career decision making. The third format was called the traditional message and focused on the

outcomes of continued undecidedness and confusion. Results showed that every student who read one of the treatment messages –positive, negative or traditional, reported higher intentions to enroll than did their counterparts who read the control message. Simple main effects and means showed that overall the positive message was the most effective in changing students' intentions in the direction of being more likely to enroll in the career class. The researchers suggested that career counselors and educators would want to use the message that would result in the highest level of change, but it is promising to find that for these students, any message can make a difference. College career classes provide an outlet for students to explore career decision making and for this study, provided the backdrop for further career intervention using the college population.

Social Cognitive Career Theory

Social Cognitive Career Theory (SCCT) builds on Bandura's original social cognitive theory (1977), extending it into service in career development. SCCT highlights the interplay between self efficacy, outcome expectations and personal goals as a way of enabling personal agency or action in the career development process (Brown & Lent, 2005). Self efficacy beliefs refer to people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances (Bandura, 1986). Career self-efficacy is the extent to which people believe they can complete certain career related tasks in a competent manner (Betz & Vuyten, 1997). Career explorations tasks have been shown to increase career decision-making self efficacy. Outcome expectations refer to beliefs about the consequences or outcomes of performing particular behaviors. Whereas self efficacy beliefs are concerned with an individual's capabilities, outcome expectations involve imagined consequences of particular courses of action. Self efficacy and outcome expectations help to determine certain important

decisions and courses of action for the individual but there may be areas where one is low but the other is high e.g. having high self efficacy to succeed in class but expecting to not do well on a test and perceiving the outcome to negatively effect one's grade. Personal goals may be defined as the ability to engage in a particular activity to produce a certain outcome. Goals provide an important avenue for people to use their own personal agency to achieve a certain endeavor. There are both choice content goals and performance goals within SCCT i.e. the type of career to pursue versus how much success will be gained within that career. Bandura believed that people's choices and performance goals are strongly influenced by self efficacy and outcome expectations. When one has strong self efficacy, there is a feedback loop that is fed by success in performance goals (or lack of success) that affects how one feels about themselves and whether they have positive (or negative) outcome expectations.

Within SCCT, the development of academic and career interests, the formation of educational and vocational choices, and the nature and results of performance in academic and career spheres are conceived as occurring within three conceptually distinct and interlocking process models (Lent, Brown, & Hackett, 1994). The Interest, Choice and Process models allow for self efficacy, outcome and expectations, and goals to combine with other important aspects of persons to help shape their academic and career development. The Interest Model highlights how a wide variety of activities at home, in the school, recreational, and peer environments help young people to develop later career or leisure opportunities. By practicing different activities and by receiving ongoing feedback, both positive and negative, about the quality of their performances, children and adolescents gradually refine their skills, develop personal performance standards, and form self efficacy and outcome expectations about different tasks and domains of behavior (Lent, 2005). According to the interest model of SCCT, people develop

self efficacy and performance outcomes in certain activities that help to nurture career interests. People are more likely to stay interested in an activity or activities if they feel that they are competent at that activity and anticipate that performing that activity will produce favorable outcomes. In turn, people are also likely to dislike some activity in which they doubt their self efficacy and feel that they receive undesirable outcomes. With emerging interests, growing self efficacy and perceived positive performance outcomes, this encourages intentions or goals that help to sustain or increase the individual's likelihood of returning to an activity.

Interestingly, Bandura (1997) suggested that there were four informational sources for modifying self efficacy: personal performance accomplishments, vicarious learning, verbal persuasion, and emotional arousal. Lopez and Lent (1992) demonstrated that performance accomplishments are the strongest contributor to self-efficacy. A person's self-efficacy is important to choice of career and major because it has been observed to play a large factor in selecting work environments. Given the expense of time and resources in attending college, it follows that the concept of self-efficacy should be given consideration in career courses at the college level, and for career counseling in general. According to social cognitive career theory, self efficacy of career decision-making influences a person's goals –i.e. the intentions or plans to pursue a career choice. Commitment to career planning and implementation is related to one's level of self efficacy in making career decisions (Chung, 2002). In addition, career self efficacy was important for this study in examining whether students would increase on measures of self efficacy due to text messaging.

Strengths

Much of the positive psychology movement has been focused upon building on strengths rather than solely relying on the old way of classifying people's weaknesses or illnesses and

focusing only on what is wrong with people. To have a better understanding of human strengths, research has been conducted to see what makes people successful and happy over time. According to Linley & Harrington (2006), strengths are defined as a capacity for feeling, thinking, and behaving in a way that allows optimal functioning in the pursuit of valued outcomes. Clifton initially studied what was “right with people” and believed that strengths were extensions of talent. Talent here is defined as naturally recurring patterns of thought, feeling, or behavior that can be productively applied (Hodges & Clifton, 2004).

As a researcher, Clifton was interested in how people that were successful in business and education fields used their strengths and talents. Clifton believed that talents could be operationalized, studied, and accentuated in work and academic settings. Secondly he believed that talent was closely related to strengths and analytical intelligence. After conducting interviews with people, he discovered that there were certain talents that predicted success in work and academic environments. After much research, including measuring close to 2 million people, Clifton and his colleagues came up with 34 themes or talents that involved enduring, positive human traits (Snyder & Lopez, 2007). Strengths based career counseling and advising has been increasingly used on college campuses to help students identify and then implement their strengths in everything from choosing a major to hunting for internships and jobs. Including a more positive psychological approach was highlighted in this study to assess whether students would benefit from learning of their strengths while they are making important decisions about their future careers.

Hope Theory

Snyder’s hope theory and definition of hope emphasize cognitions that are built on goal-directed behavior (Snyder & Lopez, 2007). Hope is defined as goal-directed thinking in which

the person utilizes pathways thinking, the perceived capacity to find routes to desired goals, and agency thinking, the requisite motivations to use those routes. Only those goals that the individuals deems valuable are considered to be hopeful. Goals can be short or long term and can also include approach or preventive. Goals can also vary based on difficulty of attainment. Pathways' thinking has been related to the production of alternative paths or routes when the way to the goal is blocked as has positive self –talk about finding routes to desired goals (Snyder, LaPointe, Crowson, & Early, 1998). People with high hope have been found to have positive emotional sets that stem from their success over time in goal pursuits whereas those with low hope have more negative emotional sets that related to their lack of success in obtaining goals. People with these approaches to hope bring these self cognitions with them when faced with goal-related activities. Hope theory proposes that the successful pursuit of goals results in positive emotions and continued goal pursuit efforts in the future. Hope is an important factor in a career class so that students remain adaptable and open to new possibilities when thinking about what kinds of jobs they might pursue in their future and how to navigate barriers to achieve their goals.

Occupational Engagement

Krieshok, Black, & McKay (2009) developed a trilateral model of career decision making. Engagement leads to or funds intuition and rationality which in turn helps the individual to make better decisions. The trilateral model explains how rational and intuitive processes inform our adaptive behaviors in respect to career decision making. The authors state that,

“the model is *trilateral* in that it includes rational and intuitive mechanisms, both of which are kept in check by engagement, our term for those behaviors we

employ to fund both rational and intuitive processes we utilize when facing a transition (when we call it exploration) and perhaps more critically when no transition is imminent (when we call it enrichment). And we refer to the model as *adaptive* to emphasize the critical nature of consistently re-visiting any person–environment matching solution (p.278)”.

The model is considered trilateral because there are three components i.e. 1) occupational engagement 2) rationality and 3) intuition. Occupational engagement informs both rational and intuitive experiences which form the basis for adaptive career decision making. Krieshok argues that vocational psychologists should be teaching people and college students how to have more optimal experiences in which they engage in behaviors that can assist them in making adaptive career decisions whether that be by conducting information interviews, job shadowing, trying on a career by volunteering or taking a part time job, talking with family members or friends, internships or gathering more salient information on the world of work. All of this information together helps the decision maker to make rationally and intuitively informed decisions about work. Theoretically, a career decision-maker who recognizes the limits of rational and intuitive processing can arrive at, and even sustain, a relatively optimal quality of decision making as a result of ongoing focused contact with the people and the world around them. They term this *occupational engagement*, and define it as taking part in behaviors that contribute to the career decision-maker’s fund of information and experience of the larger world, not just the world as processed when a career decision is imminent.

For college students and workers within the current economy, transition is inevitable. To be able to engage in the bigger picture of understanding our own inherent strengths, expand our transferable skills, and be prepared for change throughout our lifetime in the arena of work, we

can be more adaptive in our career choices and the changes that will occur. We can also fall back on our experiences of rational and intuitive decision making to help us make more informed decisions when it comes to work and our role within the world of work. Krieshok, Black, & McKay go on to explain that

“through occupational engagement, vocational and self-schemas evolve and vocational judgments and decisions are more informed, as are judgments about the larger host of life matters. Adaptive career decision making, in which decision making is enhanced through the accumulation of information and experience, becomes possible as a result of occupational engagement”(p.280).

Occupational engagement was a key factor that was evaluated in this study to understand whether students would be more adaptable as a result of being texted their results from different career assessments.

Text Messaging and Technology in Counseling Services

Evidence shows that using text messaging can be a valuable and flexible tool in delivering services ranging from smoking cessation to enhancing parenting interventions aimed at reducing child mistreatment and neglect. In addition, text messaging may be an important tool that could be used to reach college students, who engage in texting on a daily basis. Research shows that mobile phone text messaging is an ideal tool for delivering psychological interventions because of its portability, low cost, user friendliness, programmability, societal penetration and ubiquity (Boschen & Casey, 2008). One research finding indicated that some patients find communication using a mobile phone easier than face to face communication (Honkalampi, Tanskanen, Hintikka, Haatainen, & Viinamaki, 2001). With more and more college students turning towards cell phone use and text messaging as one of their primary forms

of communication, the applicability of text messaging in the health care field has wide ranging implications for delivery of quality and efficacious treatments.

Riley, Obermayer, and Jean-Mary (2008) created an intervention for college students to help them quit smoking. Text messages were sent twice per day to the study's participants that were tailored to the stage of change and the user-identified smoking urge cues. Out of 46 participants, 10 reported abstinence from smoking at 6 weeks as a result of the text messaging intervention. This quit rate is comparable to other programs aimed at helping college students to quit smoking. Text messages that were sent to the college students who participated in the study included coping strategies for handling cravings in likely high risk situations as well as text messages devoted to coping with withdrawal. In addition, participants could text the researchers back with S.O.S. text messages when they had the urge to start smoking again. In follow up studies, Riley, Obermayer, and Jean-Mary (2008) found that there was a higher reported abstinence rate reaching nearly 50 percent in the experimental group versus the control group. Feedback from participants gathered through surveys indicated that the students enjoyed the text messaging and wanted more per day to help them quit smoking.

Wade & Troy (2001) incorporated the use of technology in helping five brain injured patients to remember to take care of themselves, adhere to their medication regimens, and exercise. All patients improved on self care and medication adherence. In a related study, Kim, Yoo, & Shim (2005) had diabetic patients contact their nurses via the internet or mobile phone to report their daily blood sugars. The nurses in turn were able to monitor A1C levels and blood glucose levels and text or email the participants any suggestions for more effective management of their diabetes. As a result, the participants were more satisfied with their patient care and had significant improvements in their personal diabetes management. Another study by Gee,

Coventry, and Birkenhead (2005) used mobile phones to gather data on problematic gambling behaviors and associated variables. Technology and the use of mobile phones has an easy to use and profound method of gathering data with hard to reach or hard to treat populations.

Another study by Bigelow, Carta, and Burke Lefever (2009) investigated whether including cell phones and daily text messages might enhance the delivery of parenting interventions for maltreating families. Historically, interventions for maltreating families have varying results. Effective programming has had limited outcomes if the programs delivering the services fail to engage and retain their parent clientele. Oftentimes there are many layers to the problems of abuse and neglect of children including poverty, unstable housing, or limited social support or resources. Text messaging was implemented successfully in this study because the participants were supplied with cell phones and they received reminders during their day from their coaches on how to implement the new behaviors and demonstrate new more positive parenting skills. In the end, results showed that, compared to a similar program without the enhancement of daily text messages, attrition was reduced by one fourth. Parents indicated that they felt much supported and were able to stay with the program even when their busy schedules would have contributed to them dropping out had it not been for the flexibility and accessibility of cell phones and text messages to keep them on task and assist with their new parenting skills.

Adding technology to enhance families' participation in a parenting intervention is an acknowledgement of the need to investigate innovative approaches to reach out to today's families whose multiple risks make them difficult to engage. Moreover, the use of cellular phones recognizes the fact that young families communicate and interact differently than their parents have done in the past.

In a related study, Lanzi, Ramey, Lefever, Guest, Atwater, and Hughes (2007) found that cell phone use between providers and high risk mothers could enhance parenting behavior.

Thirty-two percent of the participants indicated that frequent contact between the mothers and the providers led the mothers to feel more reflective of their parenting. Lanzi, et al. (2007) concluded that by adding cell phone usage, service delivery could be more comprehensive in helping individuals make behavioral changes due to the nature of frequent contact and reminders to change. Individuals receiving interventions via cell phones were found to increase participant understanding, compliance, and self sufficiency using new techniques.

Another unique use for text messaging addressed teens about their sexual health. This intervention was conducted in the San Francisco area, targeting at-risk youth, in particular teenage African American males, whose rates of gonorrhea had nearly doubled from 2004 to 2005. The text messaging program was designed so that teens could text the word “SEXINFO” to a five digit number and be provided with basic facts about sexual health and relationships, as well as referrals to the appropriate agency for service. A phone tree was set up so that by choosing from the list of options and selecting a code such as “B2 if you think you are pregnant” or “D4 to find out about HIV” teens had immediate access to information in a safe, accurate and private format that was easily accessible from their cell phones. A companion website was set up so that parents and others could see sample messages online. Outreach workers handed out palm cards on the street and in schools and YAHOO ran banner ads online for two weeks. In addition, local television and radio ads contributed to the advertisement of the service. In the first 25 weeks of service, over 4500 inquiries were made via text messaging, with the highest requests for information being “A1 if ur condom broke” and the second most popular being “C3 to find out about STDs”. This type of service targeted teens but is an example of how text messaging is

a feasible and culturally acceptable way for at risk youths to receive sexual health information and referrals to sexual and reproductive health services (Levine, McCright, Dobkin, Woodruff, & Klausner, 2008). This study illustrates how text messaging can be used to disseminate information in a palatable and relatable way to young people that is cost effective and a boon for healthcare treatment and prevention.

The process and outcomes of career interventions are important in considering how to successfully employ text messaging to aid in the distribution of information about career choice, with text messaging being a new outlet for reaching large numbers of people in possibly a much more controlled and reliable way of disseminating information. In addition, text messages could be tailored to include several of the five tenets outlined by Brown and Ryan Krane (2000).

Text messaging has become one of the most common ways of communicating by young adults and college aged students. Text messaging is a behavior that these students engage in everyday and sometimes all day long, with texting between friends and parents becoming the social norm. In a recent survey of graduating seniors, the National Association of Colleges and Employers (NACE) found that students talk with their parents on average 1.6 times per day (2008). Text messaging has become a central focus within the life of a student and it may not serve strictly social purposes but rather could be used in the service of learning, and especially in the delivery of career counseling services on a college campus. Texting was included in this study to reach students about their career results in a form of communication that they are comfortable with and more closely linked to versus a career session that occurs in an isolated practice, outside of the student's world.

Hypotheses

The basic question for this study was whether students who received individualized feedback on their strengths and interests from the StrengthsQuest and Strong Interest Inventory

would show gains on their strengths awareness, hope, occupational engagement and career decision self efficacy. By adding extra touches of daily text messages for one month about their career assessment results, strengths and personalities, an additional question arises about whether those would lead to even greater gains. The null hypothesis is that as a result of individualized career assessment feedback and being text messaged daily, there will be no change in self efficacy, hope, or occupational engagement in the career decision making process. Therefore, the following are the proposed hypotheses for this study:

Hypothesis 1: Students in the class that included individual 1:1 feedback will show an increase from pretest to posttest on the Occupational Engagement Scale (OES), Hope Scale i.e. Agency and Pathways, Career Decision Making Self Efficacy Scale (CDMSE), and Strengths Awareness Measure after one month of the one to one feedback intervention.

- 1A: Students will increase on the Agency score of the Hope Scale
- 1B: Students will increase on the Pathways score of the Hope Scale
- 1C: Students will increase on the Occupational Engagement Scale
- 1D: Students will increase on the Strengths Awareness Measure
- 1E: Students will increase on the Career Decision Making Self Efficacy Scale after one month.

Hypothesis 2: Students who receive adjunct text messages will increase pre test to posttest more than the students who only receive individual 1:1 feedback, on the Hope Scale (Agency and Pathways), OES, CDMSE, and Strengths Awareness Measure.

- 2A: Students exposed to text messages will increase more on the Agency score of the Hope Scale than those students only getting individualized feedback.
- 2B: Students exposed to text messages will increase more on the Pathways scores of the Hope Scale than those students only getting individualized feedback.
- 2C: Students exposed to text messages will increase more on the Occupational Engagement Scale than those students only getting individualized feedback.
- 2D: Students exposed to text messages will increase more on the Strengths Awareness Measure than those students only getting individualized feedback.
- 2E: Students exposed to text messages will increase on the Career Decision Making Self Efficacy scale than those students only getting individualized feedback.

Definitions of Variables

For this study, the Independent variables (IVs) were time from pretest to posttest and group (text messaged or non-text messaged), and the Dependent variables (DVs) were career decision self efficacy, awareness of strengths, agency, pathways, and occupational engagement.

Summary of Literature Review

Career decision making and current trends in career counseling services were explored to outline efficacious career counseling techniques. In addition, the theoretical underpinnings of this study were explained in which social cognitive career theory, occupational engagement and hope theory come together to form the basis for creating an intervention in which career services might be enhanced by text messaging college students about career information and career assessment results.

Chapter III

Method

Two independent variables were used in this study: a within subjects variable of Time (pretest to posttest) and a between subjects variable of Group (text messaged or non-text messaged). Five dependent variables were used: Hope, which consists of Agency and Pathways (Hope Trait Scale); Occupational Engagement (OES-S); Career Decision Self Efficacy (CDSE-SF); and Strengths Awareness (SAM).

Instrumentation

The Adult Trait Hope Scale. Snyder (1991) developed hope theory to conceptualize people's ability to set goals, develop specific strategies or pathways to those goals, and initiate and sustain the motivation or agency for using those strategies. According to Snyder, people with high hope have more positive thoughts than negative thoughts on a daily basis. People with high hope are more likely to reach their goals versus those with low hope, and Snyder found that those with high hope were more successful in finding pathways around barriers to their goals so that they achieved what they set out to attain. The Hope Scale was created by Snyder and colleagues (1991). An 8-item self report scale was created to measure the trait for adults ages 15 and older, in which 4 items reflect pathways and 4 items reflect agency. The Agency and Pathway items are combined to provide a Total score. An example of a Pathways item is "I can think of many ways to get out of a jam" and an example of an Agency item is "I energetically pursue my goals". Response to each item is on an 8-point Likert continuum with 1="definitely false", to 8="definitely true". This scale takes roughly 2-5 minutes to take. The reliability of the instrument has been strong with Cronbach alphas from 0.74-0.84. The internal consistency typically has been found to be in the 0.80 range (Snyder, et al., 1991).

Construct validity via principal components exploratory factor analysis (1991) and confirmatory factor analysis (Babyak, Snyder, & Yoshinobu, 1993) corroborated the existence of a two-component (Agency and Pathways) model of hope. In addition, there is extensive data on the concurrent validity of the Hope Scale in regards to its predicted positive correlations with scales that reflect optimism, expected control, and self esteem. A reliability analysis yielded a Cronbach's Alpha of 0.85 for the Hope scale on pretest scores for this study (Table 1).

Occupational Engagement Scale (OES). The OES was developed by Cox (2008) and Krieshok, Black, & McKay (2009) and is based on the trilateral model of engagement, intuition, and rationality in decision-making. Items were developed to reflect the model and to understand how students become more occupationally engaged. Occupational engagement is defined by Krieshok et al (2008) as the "process of expanding options via the activities that increase the career decision maker's fund of information experience". The total score on this scale thus indicates how much a person is participating in experiences that teach them about themselves and the world of work (p.27). To score the OES-S, a sum of items indicates that students can score anywhere from 0-56. The scale has a Cronbach's alpha of 0.85 (Cox, 2008). A reliability analysis showed that on pretest scores on the OES-R for this study found a Cronbach's alpha of 0.87 (Table 1).

The Career Decision Self Efficacy Scale-Short Form (CDSES-SF). The CDSES-SF (Betz et al., 1996) is a 25 item questionnaire that was designed to measure one's perceived self-efficacy in relation to career decision-making behaviors. The instrument is based on Bandura's conceptualization of self efficacy via social cognitive theory (1977). The CDSES-SF is a shorter form of the 50-item Career Decision Self-Efficacy Scale (CDSE) developed by Taylor and Betz (1983). It contains five individual scales that reflect the career choice competencies outlined by

Crites (1978)—accurate self-appraisal, gathering occupational information, goal selection, making plans for the future, and problem solving. There are five items per scale. Respondents rate their level of confidence on a career decision-making behavior on a 9-point Likert-type scale ranging from 0 (no confidence at all) to 9 (complete confidence). The total score for the CDESS-SF is the sum of the five subscale scores. Research shows that the CDESS-SF is reliable and that internal consistency coefficients ranged from 0.92 to 0.97 for the total scores and 0.69 to 0.83 for the subscales (Nilsson, Schmidt, & Meek, 2002). One study found the coefficient alpha to be 0.94 for the total score and 0.74 to 0.89 for the subscales (Reese & Miller, 2006). For this study a Cronbach's alpha was found to be 0.94 (Table 1).

Strengths Awareness Measure (SAM). This measure was born out of a study in which 1,000 first year university students participated in a strengths based seminar. The scale was developed to capture whether or not students who have participated in a strengths based intervention were more aware of their areas of greatest talent and whether they learned how to appropriately apply their strengths to new situations. Compared to students who did not engage in a strengths based intervention, the items that comprise the Strengths Awareness Measure have shown to be significant in a paired samples t-test over the course of the semester of the study (Schreiner, 2004). The Cronbach alpha was 0.86. The items were subjected to principal components factor analysis with varimax rotation and two factors that emerged were strengths awareness and strengths ownership. Items 1, 3, 5, 7 and 9 are strengths awareness items and items 2, 4, 6, 8, and 10 are strengths ownership items. A reliability analysis on pretest scores for the Strengths Awareness Measure a Chronbach's Alpha of 0.78.

Table 1Reliability Analysis of Pretest and Posttest Measures

Measure	cases	Pretest Alpha	Posttest Alpha	items
CDSE	52	.94	.95	25
OES	52	.87	.89	14
SAM	52	.78	.86	10
Hope	52	.86	.89	8

Clifton StrengthsQuest. The Clifton StrengthsQuest, developed by Donald Clifton and the Gallup Organization, is a 360 item questionnaire designed to assess an individual's top five strengths or themes. There are 34 themes total and coefficient alphas have ranged from 0.55 to 0.81 with WOO having the highest internal consistency (0.81) and Connection and Restorative having the lowest (both below 0.60). Most test-retest correlations are above 0.70—considered appropriate for a measure of a personal trait (Snyder & Lopez, 2007). The StrengthsQuest aids in identifying personal talents and the related supporting materials can help individuals discover how to build on their talents to develop strengths within their particular life roles. Feedback for an individual's profile includes a ranking one's top five strengths in order of potency. According to the authors, it is not sensitive to change and should not be used as a pre-post measure of growth.

The Strong Interest Inventory. The Strong Interest Inventory is one of the most widely used and recommended vocational assessments (Watkins, 1993). There are 291 items on the scale divided into six content areas: occupational titles, school subjects, work activities, leisure activities, self characteristics, and preferences in the world of work. According to Harmon et al., (1984) the reading level is eighth grade. The SII is scored for three sets of scales. The General Occupational Themes provide scores for Holland's six RIASEC types. The Basic Interest Scales consist of homogenous items that measure interests in 25 basic fields. The 207 Occupational scales, representing 122 different occupations, are empirically derived measures of interest in specific occupations.

The General Occupational Themes were first described by producing items that represented the definitions and descriptions of the Holland RIASEC model by using a sequential method of scale construction. Intercorrelations helped to select those items that contributed most to the homogeneity of the scale. According to Hansen & Campbell (1985), the resulting scales have internal consistencies ranging from 0.90 to 0.95. and median test-retest coefficients of 0.86 and 0.81, respectively, over 30 day and three month intervals (Harmon et al., 1994). Evidence of validity for the GOT scores are found in the large correlations between same named scales on the Vocational Preference Inventory (Holland, 1975) and the SII and according to Hansen & Campbell (1985), the power of GOT to separate occupational groups over about three standard deviations of scores in a logical fashion e.g. mental health workers scoring low on the Realistic theme and engineers scoring high.

The 25 Basic Interest Scales (BIS) represent the next level of specificity and scores on these scales help clients to answer the question, "What do I like?" The BIS include scales such as Mechanical Activities, Sales, Medical Science, Applied Arts, Teaching, and Computer

Activities. The BIS were developed by methods of clustering. The resulting item content was of each scale was homogenous with alpha coefficients ranging from .77 to .96. The test-retest correlations are large with medians of .85 and .80 over 30 days and three months, respectively (Harmon et al., 1994). Evidence for validity for the BIS scores consists of studies that examined the extent to which the scales differentiate occupations in a logical manner e.g. auto dealers score high while physicists score low on the Sales BIS (Hansen & Campbell, 1985).

The Occupational scales provide the greatest level of specificity of interest measurement on the SII and answer the question “Who am I like?” They compare the interests of the test taker directly to those people employed in each occupation who are satisfied with their work. A total of 109 occupations are represented on the Strong Interest Inventory; about one third of the occupations represented can be entered without a college degree e.g. carpenter, beautician, florist, optician, travel agent, and the remainder represent occupations that require a professional degree such as architect, psychologist, nurse, social science teacher, etc. The Occupational scales are organized by their assigned Holland theme type e.g. the Chemist scale and Biologist scale both are coded Investigative and thus appear on the same section of the profile.

The Occupational scales are constructed using the empirical method of contrast groups. This technique identifies about 50 to 60 items for each Occupational scale that differentiate the likes and dislikes of men and women in the occupation from women in general or men in general. The median test retest correlation for the Occupational scales is 0.87 and 0.85, respectively over 30-day and three month intervals (Harmon et al., 1994). Evidence for validity has been much researched and relies mostly on generalizing from earlier studies. Savickas, Taber, & Spokane (2002) found that scores on the SII correlate substantially with other interest inventories e.g. the CISS, the SDS, the KOIS, and the UNIACT. Another important line of

evidence of validity for SII scores involves comparing scores on the Occupational scales to declared choices.

The fourth set of scales is composed of four Special scales of the Learning Environment, Work Style, Leadership style, and Risk Taking/Adventure. The Learning Environment scale reflects the extent to which an individual has interests similar to those who persist in academic environments. A high score on this scale would indicate that one enjoys learning for the sake of learning and will often aspire to complete graduate degrees. A medium range score have academic interests similar to people who have completed undergraduate degrees and a low score on this scale are similar to those who didn't pursue a college degree. Studies that examined validity indicate that this does not indicate ability but rather those who score low are interested in education for its practical purpose and applicability in a work setting.

The Work Style scale was previously labeled introversion-extroversion and scores on this scale reflect ones interests in spending time with and working with people (high score), and also those who enjoy working with ideas, things and data (low score). The Leadership Style scale is similar to the Work Style scale in that high scores reflect an interest in leading and managing others while low scores indicate a preference for working alone or those who wish to not take leadership role. Corporate trainers and school administrators score high on this scale while mechanics and mathematicians score low. The last scale is the Risk Taking/Adventure scale which measures a willingness to take risks in the areas of social, financial or physical risks (high scores). Police officers score high whereas librarians score low on this scale. These four scales have been normed on a sample of adult men and women from a large pool of occupations. The mean for this sample is set to equal 50, where scoring above 55 indicates a high score while scoring below 45 would amount to a low score. The standard deviation is set at 10. The test-retest

reliabilities over 30 days are 0.83, 0.91, 0.85, and 0.87 for Learning Environment, Work Style, Leadership Style, and Risk Taking/Adventure, respectively (Harmon et al., 1994).

For this study, the interpretation of the SII served as part of the required component for each student as part of the Career and Life planning class.

Participants

Participants for the study consisted of 120 undergraduate students, 81 of whom participated in the intervention study with 34 students text messaged on a daily basis for one month and 47 students serving in the non-text messaged group. The remaining students chose not to participate in the study, but were in the class from which the participants were recruited. The undergraduate students were from a large Midwestern university and were recruited to participate in the study during the first week in a Career and Life Planning class offered to freshman and sophomore students. Students were asked to participate in the study after their first week of attending classes for the spring semester. All students as part of the class were required to take the Strong Interest Inventory, The Do What You Are assessment, and the StrengthsQuest. All students enrolled in the class (n=120) were given an individualized assessment results session upon completion of the assessment battery. Students were then asked whether they would like to participate in the text messaging study for one month. Random assignment of volunteering participants was based on section of class attended. The text messaged group consisted of 34 students who were text messaged during the school week. After one month of texting, all students completed follow-up surveys. Human Subjects approval was granted for this study. Students were not monetarily compensated for their participation in the study.

Procedure for Data Collection

Participants completed the Clifton StrengthsQuest and Strong Interest Inventory as part of their required coursework in the Career and Life Planning class in which they were enrolled. The students completed the Career Decision Self Efficacy Scale (CDSE-SF), Adult Trait Hope Scale, Occupational Engagement Scale for Students (OES-S), Career Interest Inventory Reaction Questionnaire, Strengths Awareness Measure, and demographic survey as part of the initial pre testing which took place online, in the second week of class. All data were collected from students via SurveyMonkey, an online survey tool. Students completed the online pretest battery, which took about 15 minutes to complete. After the students completed the questionnaire and consented to be a part of the study, students were randomly assigned to a trained career counselor, advanced graduate student in Counseling Psychology, or Vocational psychologist. All students within the class were given individualized feedback with a trained career counselor, regardless of whether or not they consented to be part of the text messaging study. As part of the Career and Life Planning class, traditionally all students are given a battery of career assessments which provides information for students throughout the semester as part of the class. This particular intervention went a step further and provided students individualized feedback about their assessments, as opposed to the group feedback that students taking this class have traditionally received.

All of the counselors were trained to interpret the Strong Interest Inventory and StrengthsQuest to the students and followed a structured protocol when giving individual feedback to their assigned student. Each counselor met with one student from each class meeting period, for a total of 2 to 4 students per counselor for this study. In addition to giving feedback about the StrengthsQuest and Strong Interest Inventory, each counselor also rated the session on

a scale from 1 to 5 with 1 being not engaged to 5 being extremely engaged, which reflected how engaged their student was in the process during the session. Amount of time of the session spent 1:1 with each student was also recorded.

After one month, students completed the posttest measures which consisted of the Adult Trait Hope Scale, Career Decision Making Self Efficacy Scale, Career Interest Inventory Reaction Questionnaire, Strengths Awareness Measure and Occupational Engagement Scale for Students online using a link to SurveyMonkey (www.surveymonkey.com).

Group Design

The design consisted of a pretest posttest, quasi-experimental design. Both groups participated in pretesting and posttesting and 1:1 individual feedback, with the text messaged group receiving the intervention of text messaging for one month.

Text messaging

Students assigned to the text messaged group received text messages, which occurred over the course of one month with students receiving 3-5 text messages during the work week in the afternoon. Students in this study all had access to their own personal cell phones with text messaging capabilities, a requirement to participate in the study. Examples of text messages ranged from reminders about using one's top five strengths, to conducting informational interviews, to asking friends and families what they thought were the strengths of the student. Text messages were also tailored to the individual when discussing Holland Codes and Strengths (See Appendix B) several times during the course of the intervention.

Text Messages were devised according to both the literature on key components of effective career interventions (Brown & Ryan Krane, 1998) as well as information gathered from a pre-study focus group conducted with six undergraduate students who were employed by the

university's career center. After gathering the feedback produced from the focus group, it was determined to be important to implement the text messaging into the study by delivering the text messages only once per day during the work week and only after 12:00PM, to allow flexibility for the participants' receiving the messages while engaged in their daily tasks at college in a typical college day setting.

Hypotheses

Hypothesis 1: Students in the class that included individual 1:1 feedback will show an increase from pretest to posttest on the Occupational Engagement Scale (OES), Hope Scale i.e. Agency and Pathways, Career Decision Making Self Efficacy Scale (CDMSE), and Strengths Awareness Measure after one month of the one to one feedback intervention.

- 1A: Students will increase on the Agency score of the Hope Scale
- 1B: Students will increase on the Pathways score of the Hope Scale
- 1C: Students will increase on the Occupational Engagement Scale
- 1D: Students will increase on the Strengths Awareness Measure
- 1E: Students will increase on the Career Decision Self Efficacy Scale after one month.

Hypothesis 2: Students who receive adjunct text messages will increase pre test to posttest more than the students who only receive individual 1:1 feedback, on the Hope Scale (Agency and Pathways), OES, CDMSE, and Strengths Awareness Measure.

- 2A: Students exposed to text messages will increase more on the Agency score of the Hope Scale than those students only getting individualized feedback.
- 2B: Students exposed to text messages will increase more on the Pathways scores of the Hope Scale than those students only getting individualized feedback.
- 2C: Students exposed to text messages will increase more on the Occupational Engagement Scale than those students only getting individualized feedback.
- 2D: Students exposed to text messages will increase more on the Strengths Awareness Measure than those students only getting individualized feedback.
- 2E: Students exposed to text messages will increase on the Career Decision Self Efficacy scale than those students only getting individualized feedback.

Data Analysis

The hypotheses were tested using two way repeated measures Analysis of Variance—ANOVA, to determine variance pretest to posttest and to see how much of the variance was accounted for by the texting intervention. Because there was more than one dependent variable (occupational engagement, agency, pathways, strengths awareness, and career decision self efficacy), five separate ANOVAs were conducted. An alpha of .05 was used to test for significance. A correlation matrix was assessed to determine colinearity.

Data Entry

All data were entered into SPSS 17.0 for analysis. Out of the 80 students that participated in the study, 33 students were assigned the experimental group and 47 were placed in the control. After collecting the online pretest data, 23 students in the experimental group completed both pre and posttesting and were subjected to the text messaging intervention. Twenty-nine students in the control group completed both pre and post testing and comprised the control group for an overall $n = 52$. Only students that completed both pretest and posttesting measures were included in the final analysis.

CHAPTER IV

Results

Characteristics of the Study Sample

In total, 52 participants provided data for the current study. Table 2 presents status of the participants at the start of the study including the number of participants who completed the individualized feedback of career assessments with a counselor, the number of students who completed the pretest measures and the number of participants who completed the posttest measures, the number of participants who completed both pre and post testing, as well as the number of participants who dropped out of the study.

Table 3 displays the characteristics of the sample including age, gender, ethnicity, year in school, and the final number of participants who comprised the experimental and control groups. All of the participants were undergraduate students enrolled in a Career and Life Planning course in the spring semester at a large Midwestern university.

The mean year in school for the study sample was Freshman ($M=1.44$, $SD=.73$) with 33 participants reporting that they were in their first year at college (63.5%). Of the 52 participants, 23 were randomly assigned to the Experimental group (44.2%) and 29 were assigned the Control group (55.8%). The mean age of the study sample was 19.09 years ($SD=.50$).

Hypothesis Testing

Both hypotheses were tested using 5 two-way repeated measures analysis of variance (ANOVA). The within subjects independent variable was Time as measured by scores from pretest to posttest, and the between subjects independent variable was Texting, as delineated by texted and non texted groups. The dependent variables were Strengths Awareness (measured by the Strengths Awareness Scale), Hope including Agency and Pathways thinking (measured by

the Hope Scale), Occupational Engagement (measured by the Occupational Engagement Scale) and Career Decision Self Efficacy (measured by the Career Decision Self Efficacy Scale).

Table 2

Participation Status across Time

Status	n
Students enrolled in the class	120
Students who received 1:1 feedback	120
Agreed to participate in study	87
Did not agree to participate in study	33
Completed Pretest	80
Completed Posttest	69
Completed both pre and posttesting	52
Dropped out of study after agreeing to participate	35

Table 3

Characteristics of the Study Sample

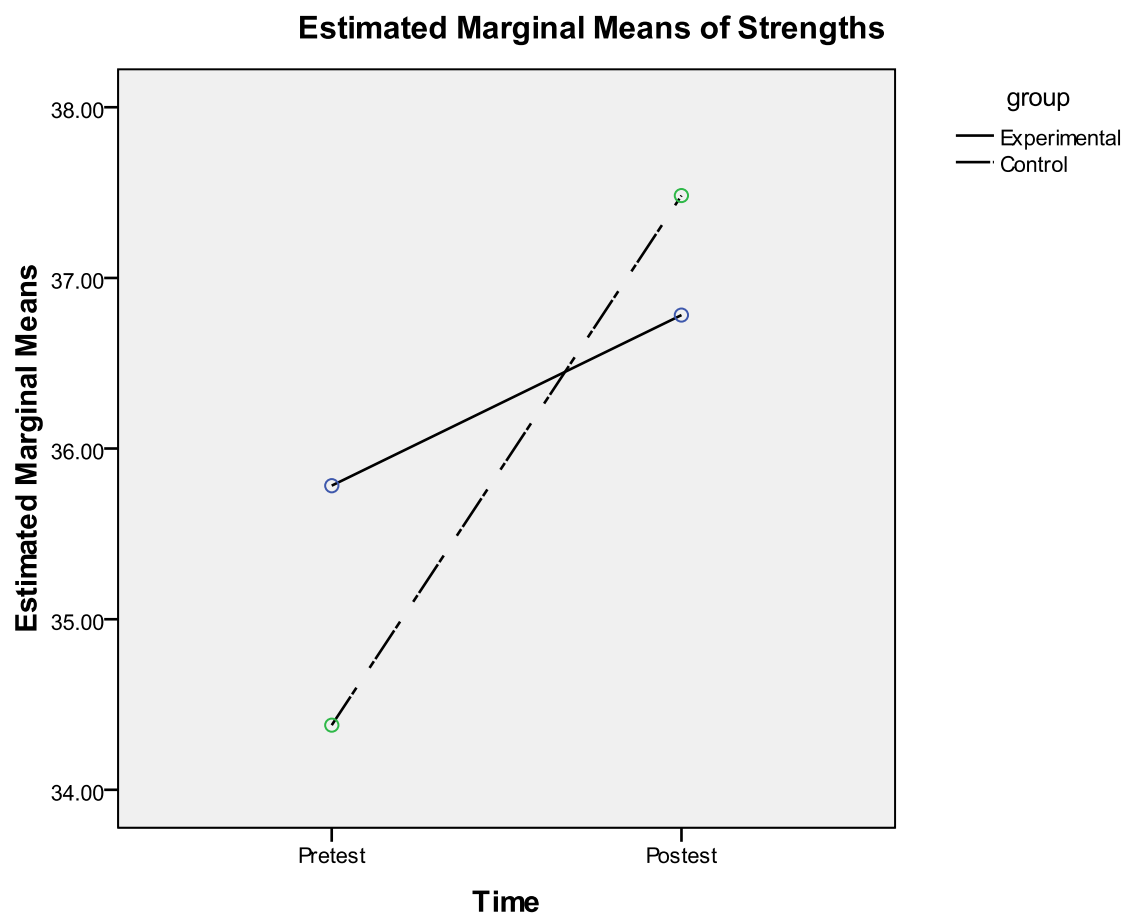
Variable	n	%
Total Sample	52	100%
Age		
18 years old	11	21.2%
19 years old	29	55.8%
20 years old	10	19.2%
21 years old	1	1.9%
23 years old	1	1.9%
Gender		
Male	28	53.8%
Female	24	46.2%
Ethnicity		
Caucasian	49	94.2%
Asian	2	3.8%
Biracial	1	1.9%
Year in School		
Freshman	33	63.5%
Sophomore	17	32.2%
Junior	1	1.9%
Nontraditional	1	1.9%
Group		
Experimental	23	44.2%
Control	29	55.8%

Strengths. A two-way analysis of variance was conducted to evaluate whether students in either texted or non-texted groups differed on scores from pretesting to posttesting on Strengths awareness. The dependent variable was Strengths awareness. The within subjects factor was Time from pretesting to posttesting and the between subjects factor was Group (texted or non-texted group). The Time and Group x Time main effects were tested using the multivariate criterion of Wilks's Λ . The Time main effect was significant, Wilks's $\Lambda=.87$ $F(1,$

50) = 7.47, $p < .05$, as seen in Table 10. The Group x Time interaction effect was not significant, Wilks's $\Lambda = .96$, $F(1, 50) = 1.96$, $p < .05$.

One paired samples t-test was computed to assess differences between strengths awareness from pretest and posttest, controlling for familywise error rate using Holm's sequential Bonferroni approach. Strengths awareness yielded a significantly lower mean rating at posttest, $t(51) = -2.88$, $p < .01$.

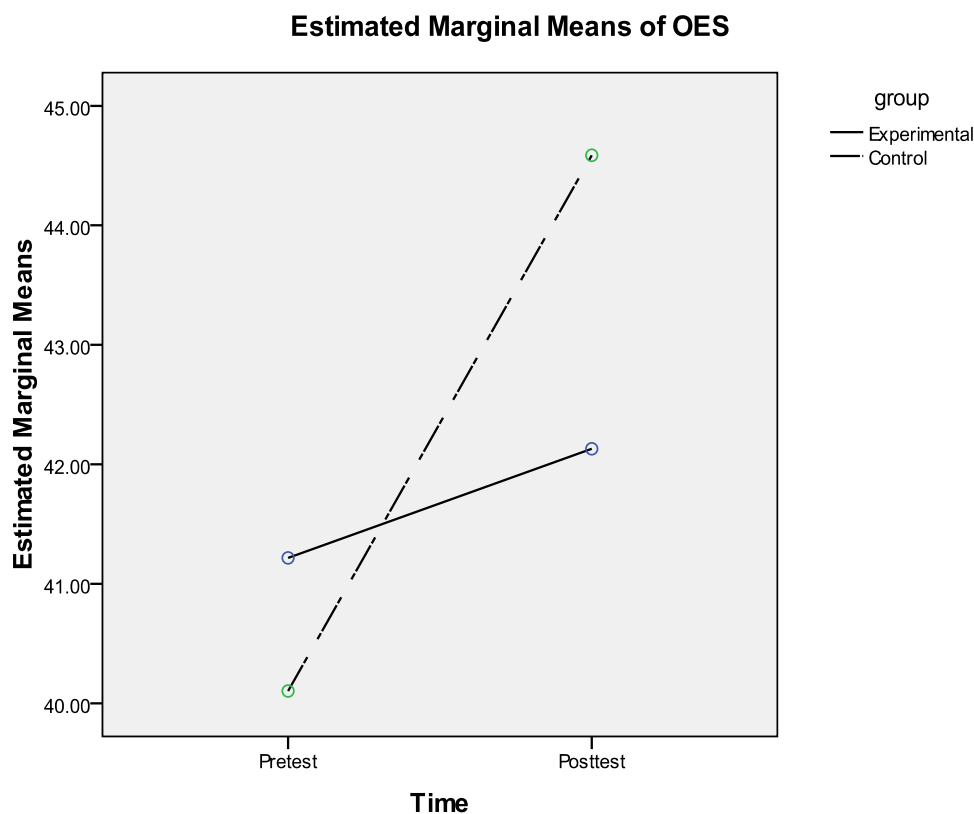
Table 4



Occupational Engagement. A two-way analysis of variance was conducted to evaluate whether students in either texted or non-texted groups differed on scores from pretesting to posttesting on Occupational Engagement. The dependent variable was Occupational Engagement. The within subjects factors was Time from pretesting to posttesting and the between subjects factor was Group (texted or non-texted group). The Time and Group x Time main effects were tested using multivariate criterion of Wilks's Lambda. The Time main effect was significant, Wilks's $\Lambda = .89$, $F(1, 50) = 6.22$, $p < .05$, as seen in Table 10. The Group x Time interaction effect was not significant, Wilks's $\Lambda = .948$, $F(1, 50) = 2.2721$, $p < .05$.

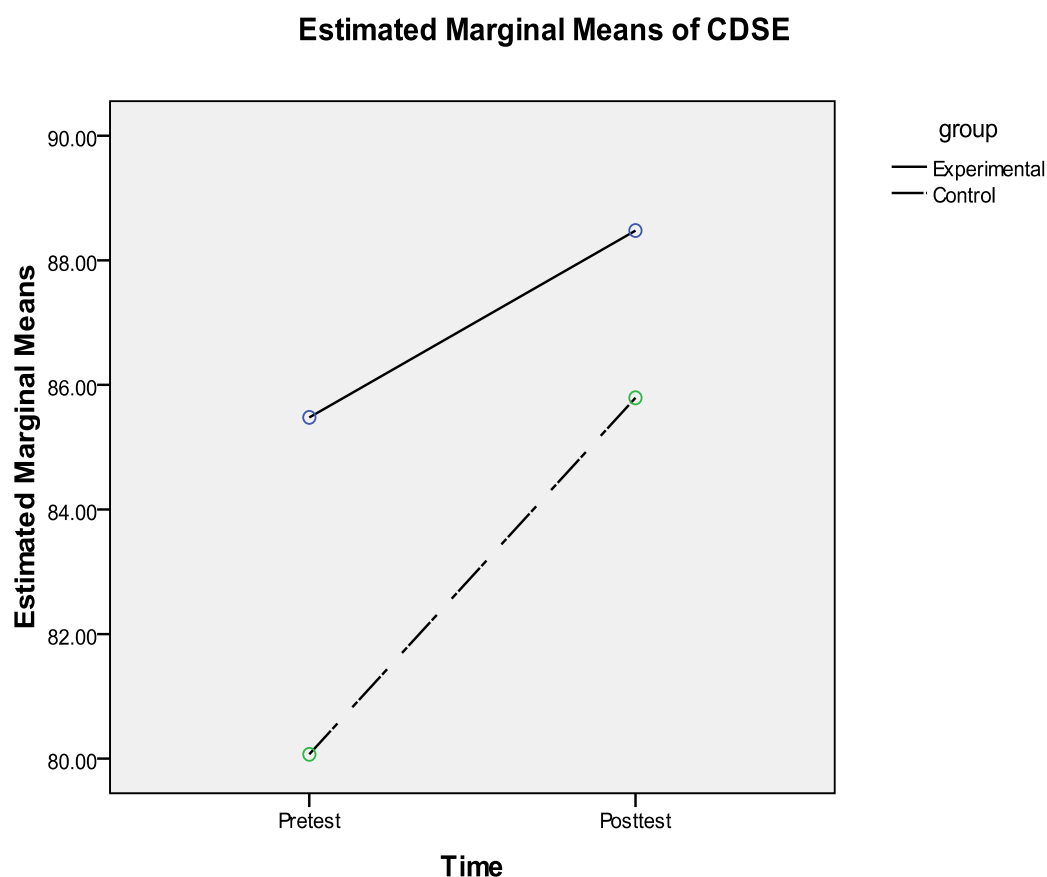
One paired samples t-test was computed to assess differences between occupational engagement at pretest and posttest, controlling for familywise error rate using Holm's sequential Bonferroni approach. Occupational engagement yielded a significantly lower mean rating at posttest, $t(51) = -2.66$, $p < .01$.

Table 5



Career Decision Self Efficacy A two-way analysis of variance was conducted to evaluate whether students in either texted or non-texted groups differed on scores from pretesting to posttesting on Career Decision Self Efficacy. The dependent variable was Career Decision Self Efficacy. The within subjects factors was Time from pretesting to posttesting and the between subjects factor was Group (texted or non-texted group). The Time and Group x Time main effects were tested using multivariate criterion of Wilks's Lambda. The Time effect was not significant, Wilks's $\Lambda=.94$, $F(1, 50)=3.16$, $p < .05$. The Group x Time interaction effect was also not significant, Wilks's $\Lambda=.99$, $F(1, 50)=.31$, $p < .05$. No follow up paired samples t-tests were computed due to the absence of significant main effects.

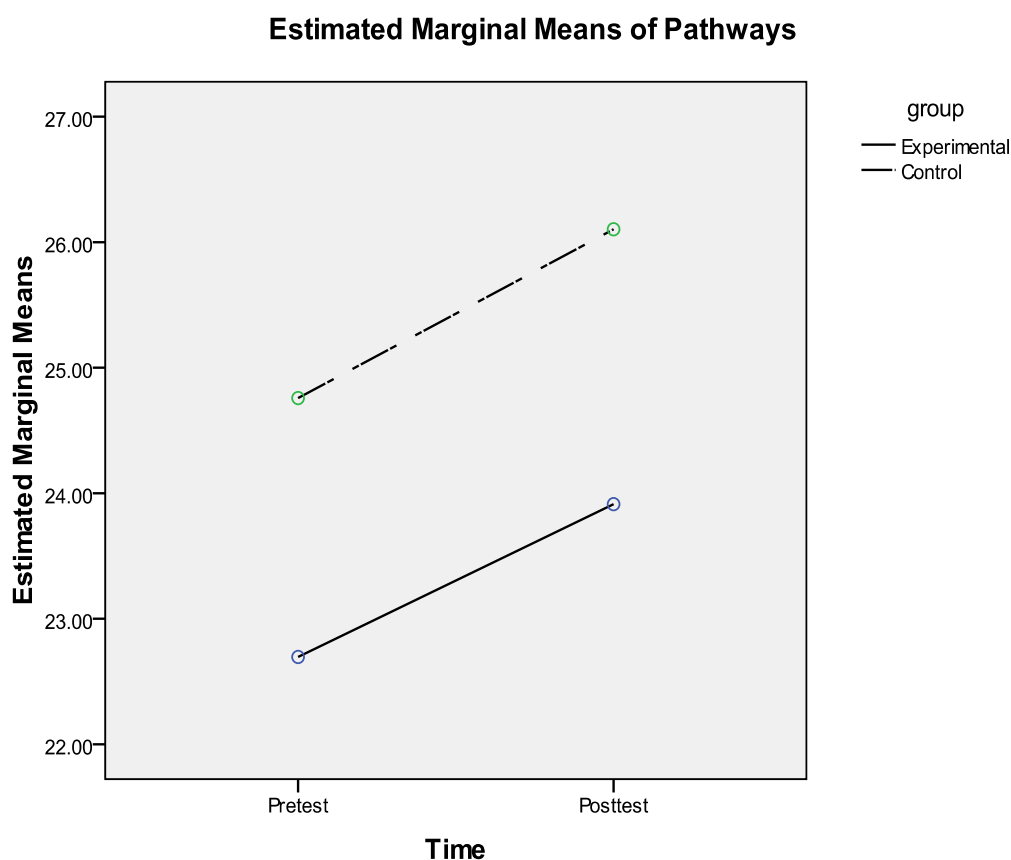
Table 6



Pathways A two-way analysis of variance was conducted to evaluate whether students in either texted or non-texted groups differed on scores from pretesting to posttesting on Pathways. The dependent variable was Pathways. The within subjects factors was Time from pretesting to posttesting and the between subjects factor was Group (texted or non-texted group). The Time and Group x Time main effects were tested using multivariate criterion of Wilks's Lambda. The Time effect was significant, Wilks's $\Lambda = .92$, $F(1, 50) = 4.20$, $p < .05$. The Group x Time interaction effect was not significant, Wilks's $\Lambda = 1.00$, $F(1, 50) = .010$, $p < .05$.

One paired samples t-test was computed to assess differences between pathways at pretest and posttest, controlling for familywise error rate using Holm's sequential Bonferroni approach. Pathways yielded a significantly lower mean rating at posttest, $t(51) = -2.66, p < .01$.

Table 7



Agency A two-way analysis of variance was conducted to evaluate whether students in either texted or non-texted groups differed on scores from pretesting to posttesting on Agency. The dependent variable was Agency. The within subjects factors was Time from pretesting to posttesting and the between subjects factor was Group (texted or non-texted group). The Time

and Group x Time main effects were tested using multivariate criterion of Wilks's Lambda. The Time effect was significant, Wilks's $\Lambda = .894$, $F(1, 50) = 5.93$, $p < .05$. The Group x Time interaction effect was not significant, Wilks's $\Lambda = 1.00$, $F(1, 50) = .007$, $p < .05$.

One paired samples t-test was computed to assess differences between agency at pretest and posttest, controlling for familywise error rate using Holm's sequential Bonferroni approach. Agency yielded a significantly lower mean rating at posttest, $t(51) = -2.47$, $p < .01$.

Table 8

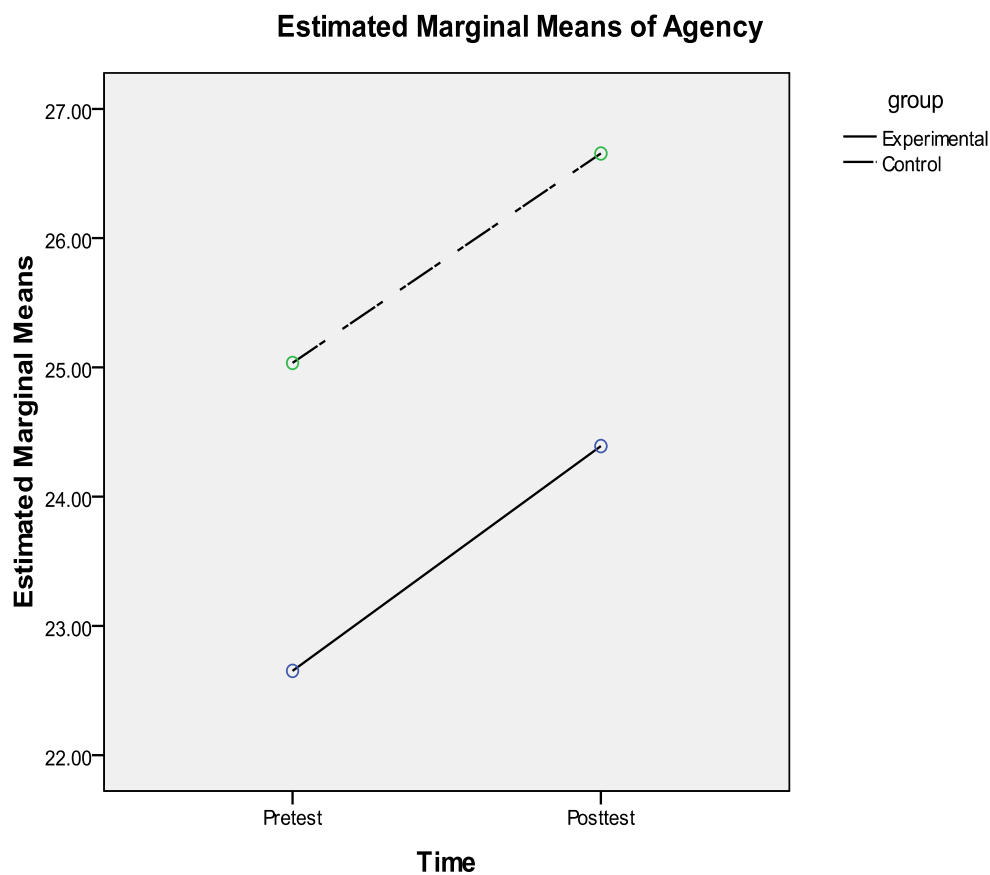


Table 9

Means and Standard Deviations of Pretest and Posttest Experimental and Control Groups

Measure	Texted				Non Texted			
	X	Pretest (SD)	X	Posttest (SD)	X	Pretest (SD)	X	Posttest (SD)
Strengths	35.7	(4.8)	36.7	(4.5)	34.3	(6.1)	37.5	(6.5)
CDSE	85.5	(16.2)	88.5	(14.3)	80.1	(16.5)	85.8	(17.9)
OES	41.1	(7.7)	42.1	(6.3)	40.1	(10.1)	44.5	(10.5)
Agency	22.7	(3.9)	24.4	(3.8)	25.0	(4.8)	26.7	(3.9)
Pathways	22.7	(4.6)	23.9	(4.2)	24.8	(4.1)	26.1	(4.1)

Table 10

Summary of Source of Variation of Dependent Variables

Source of Variation	Sum of Squares	df	Mean Square	F	Sig
<u>Strengths Awareness</u>					
Group	3.17	1	3.17	.06	.80
Time	107.99	1	107.99	7.47	.01
Group x Time	28.37	1	28.37	1.96	.17
Error	722.34	50	14.44		
<u>CDSE</u>					
Group	420.21	1	420.21	1.09	.30
Time	488.13	1	488.13	3.16	.08
Group x Time	47.59	1	47.59	.31	.58
Error	7733.9	50	154.7		
<u>OES</u>					
Group	11.55	1	11.55	.09	.77
Time	186.72	1	186.72	6.22	.02
Group x Time	81.73	1	81.73	2.72	.11
Error	1501.53	50	30.03		
<u>Pathways</u>					
Group	116.03	1	116.03	4.53	.04
Time	42.10	1	42.10	4.20	.05
Group x Time	.10	1	.10	.01	.92
Error	501.23	50	10.03		
<u>Agency</u>					
Group	138.45	1	138.45	6.11	.02
Time	72.40	1	72.40	5.93	.02
Group x Time	.09	1	.09	.01	.93
Error	610.63	50	12.21		

A one-way analysis of covariance (ANCOVA) was conducted. The independent variable, Group, included two levels: texted group and non-texted group. The dependent variable was Hope, the combined sum of Pathways and Agency scores for the pretest before texting, and the

covariate was time of day (AM or PM) that students were in the career education class. A preliminary analysis evaluating the homogeneity of slopes assumption indicated that the relationship between the covariate and the dependent variable did not differ significantly as a function of the independent variable, $F(1, 46) = .13$, $MSE = 65.58$, $p = .73$, partial $\eta^2 = .00$. The ANCOVA was also not significant, $F(1, 46) = 4.74$, $MSE = 56.91$, $p = .79$, $\eta^2 = .00$. The strength of the relationship between Group, texted or non-texted, and the dependent variable of Hope, was not strong, holding constant for time of day that the students were in the career education class.

The means for Hope scores in the texted group and non-texted group adjusted for initial differences were ordered as expected across the two different groups. The texted group had the highest adjusted mean ($M = 51.43$) while the non-texted group had a slightly smaller adjusted mean ($M = 49.24$).

In addition, five independent samples t tests were conducted to evaluate whether students that completed both pretesting and posttesting on all five dependent variables scored higher overall on all measures versus those students that only completed pretesting and thus dropped out of the study. In total, 28 students completed only pretesting while 52 students completed both pre- and posttesting. All five t tests were not significant, for Pathways, $t(78) = -.35$, $p = .85$, for Agency $t(78) = .29$, $p = .89$, for Career decision making self efficacy, $t(78) = -.27$, $p = .75$, for Strengths awareness, $t(78) = .12$, $p = .06$, and for Occupational engagement, $t(78) = -.11$, $p = .96$. Table 11 shows the distribution of means for both pretested only ($n = 28$) and students who completed both pre- and posttesting ($n = 52$) in the study.

Table 11

Summary of Means and Standard Deviations of Pretest Scores for Independent t-tests for all Dependent Variables for Pretested Students Versus Students who Completed Both Pre and Posttesting

Dependent Variable	Pretest Only		Pre- and Posttest Completed	
	X	SD	X	SD
Pathways	24.14	(4.74)	23.77	(4.45)
Agency	23.68	(4.81)	24.00	(4.60)
Career Decision Self Efficacy	83.46	(15.36)	82.46	(16.41)
Strengths Awareness	34.82	(7.13)	35.00	(5.58)
Occupational Engagement	40.82	(8.64)	40.60	(9.04)

Chapter V

Discussion

Text messaging has become ubiquitous in our modern culture as a fast and efficient way of communicating. Research shows that text messaging can be implemented easily in everything from preventive care to smoking cessation to helping parents with parenting skills (Brown & Whitaker, 2008; Lefever, et al., 2008; Lin & Peper, 2009). Bosch & Casey (2008) advocated for using technology in the clinical setting, where mobile phone use can provide an opportunity for the patient and therapist to expand the methods of communication between them in a therapeutic alliance. Allowing the patient contact with the therapist can often help with homework completion and even in vivo exposure, as evidenced by one study in which cell phone messages could help with driving phobias during solo driving trips (Flynn et al., 1992). Clearly there is a need for an expanded form of treatment that includes the growing popularity and access to cell phones.

With this study, the results indicated that both text messaged and non-text messaged groups overall increased in scores from pretest to posttest on all of the dependent variables. However, it appears that texting alone was not effective in creating an additive effect on Hope, Occupational Engagement, Career Decision Making Self Efficacy and Strengths Awareness. The hypotheses were supported in that overall, students increased from pretest to posttest scores but texting did not have an effect.

The participants did however increase on all the measures from pretesting to posttesting, with significant main effects found on Occupational engagement, Strengths awareness, Agency, and Pathways, indicating that as time passed, students were more occupationally engaged, more aware of their strengths, had increased agency and pathways of hope. Hypothesis 1 is supported

and students increased on all dependent variables with the passage of time. The increases on scores of Occupational engagement, Strengths awareness, Agency and Pathways of Hope over time may have also been influenced by the effectiveness of the individual session that each student participated in which they were paired with a graduate level counseling psychology student, career counselor from the University Career Center, doctoral level counseling psychology graduate student, or Licensed Vocational psychologist each, which helped students understand the results from the Strong Interest Inventory and the StrengthsQuest. These sessions were offered to every student in the course to mimic a standard career counseling session. In future studies, it would be important to include a true control group that does not receive any treatment; whether that is the class, one to one feedback or daily text messages. With students in the control group that only received one to one feedback and attendance in the career class, clearly their scores increased over time.

Brown and Ryan Krane (2000) state that the important goals of career counseling involve helping people make goal congruent work or career choices that will allow them to experience work, career, and life satisfaction in a changing society. In considering effective career counseling interventions, there are five key elements that have been identified as contributing to gains in career decidedness and maturity within the career counseling process. Gathered from meta-analysis conducted by Oliver and Spokane (1988) and updated by Whiston et. al. (1998), in which 62 studies of career interventions were analyzed, findings suggest that the five tenets for effective career intervention outcomes include written exercises, individualized interpretations and feedback, information on the world of work, modeling and attention to building support. While text messages sent to the participants were tailored to try to include these various tenets,

there might have been several factors that accounted for the non-significant results of text messaging as an efficacious additional intervention.

Limitations

Some of the limitations to consider with the present study include levels of attrition, population sampled, number and frequency of text messages sent, information contained within each text message, effects of being in a career class, and sample size. The attrition might have accounted for decreased power of the study with the original $n=80$, experimental group $n=34$ and control group $n=47$. After taking into account missing data and missing pretest and posttest scores, the overall $n=52$ was 28 participants fewer at the time of analysis. In addition, several students of the text messaged group dropped out of the study for reasons of either needing to focus on school work, personal issues, or frustration with the daily text messages delivered.

The population sampled was also an undergraduate class from the spring semester of the Career and Life Planning class. Anecdotally, instructors report that these students typically are in need of major selection in order to continue their line of study at the University or are students with academic problems i.e. low GPA, and thus are placed on academic probation. The class itself is often used to boost GPAs for those placed on academic probation because of its workload and low credit hours. This may account for some of the variability in scoring. In addition, it might be of interest to measure students initially coming into the University in the fall semester, or look at graduating seniors who are facing first time employment, graduate school or other life path choices.

Information contained within the text messages was typically shorter than 60 characters but perhaps could have been more individualized to reflect career assessment results. There might have been a greater benefit had the texted group received daily text messages versus 3-5

texts per week or more than one message per day might have increased their awareness of career information. Daily text messages were not sent to the texted group but future studies might include more texts per day. Students were not required to text message back once they received a text but a few participants regularly texted answers to the text messages sent ($n=7$). Their responses ranged from describing their strengths (“socialization skills” or “Belief, Responsibility, Social skills”) to asking to be dropped from the study. An interesting follow up study might be to interview the students that did regularly engage in texting back answers to the text messages originally sent. Another direction might be having the career counselors that the students initially received feedback from more personalized text messages with their assigned students.

Future Directions

Text messaging can be a very useful tool in keeping in communication with friends and family but also has been included among other techniques in therapy, to help clients feel more connected or supported and to insure that accurate information is dispersed. In the future, following up with these students might be helpful to understand their thoughts and reactions to receiving daily text messages. In addition, qualitative studies might be introduced to help understand which text messages would be most helpful. Text messaging might be helpful in rural settings as well as with populations that frequently use text messaging as a primary form of communication. Perhaps it is another tool that could help people have access to sound therapeutic intervention, health information, or career counseling when needed.

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Appendix A

Pilot Text Messages

1. What do your friends and family say are your strengths?
2. What do you think you are good at?
3. Today tell someone about one of your strengths.
4. What is your dream job?
5. What are you doing that you love?
6. Think of a time you overcame a huge obstacle. Which strengths did you use to overcome it?
7. Spend 60 seconds imagining yourself in your perfect job.
8. If you could volunteer somewhere, where would you?
9. What does your perfect workplace look like?
10. What type of people would you like to work with?
11. If you could design an internship for yourself, who would it be with?
12. What would your roommate/friend's Holland code be?
13. Would you rather go to a party with Artistic, Social, or Investigative people?
14. Talk to one person today about your career plans.
15. Chat with someone on campus for 5 minutes about their life and what their goals are for the future.
16. What's one thing you have to have in your career/job?

Individualized:

1. Here are your top 5 strengths: _____ Come up with a creative way to remember them.

2. Here are your top 5 strengths: _____. Try not to think about them the rest of the day.
3. One of your top strengths was _____. How can you work on a current assignment using _____?
4. Your Holland code is _____.
5. Here are some of your top 10 occupations: _____.
6. How would your life be different without [top strength]?

Appendix B

Text Messages Sent During Intervention

Can you name your top strengths?

What do your friends and family say are your strengths?

What do you think you are good at?

Today, try to use one of your strengths whether that is by telling someone about it, using it in a unique way or thinking about a plan of action you would take to build on that strength in the future.

How did you use your strengths today?

Find a person on campus that you would like to know more about and chat with them today or in the next day for 5 minutes about their life and what their goals are for the future.

What is your dream job?

Tell a friend or family member something they are good at. How did they react?

What do you want to accomplish in life?

Would you rather work alone or with a large group of people?

Do you enjoy being with people or do you get more energy from being alone?

If you could wake up and it is your future perfect day, what would that look like? What kind of job would you be going to? Would you be living in a city or in the country? Would you be single or have a family?

Who do you talk to about your career goals?

What are your career goals?

If you had to choose to go to a job today, any job, what would you choose?

Who do you look up to? Who is your mentor?

Appendix C

Student Text Responses to Text Messages

Intro text: Welcome to the study, thank you, our goal is to think more about this stuff, no more than one text per day and not on weekends:

Awesome. Sounds good.

What do your friends and family say you are good at?

Talking to people, and learning.

Being social and outgoing

How can I block these texts?

I am kind and easy to talk to. I'm not afraid to try new things.

I'm very sorry but may I be removed from this list it is just not a good time.

I have good people skills; I'm a hard and organized worker.

Would have to say my honesty and work ethic.

Speaking with people

What is your dream job?

Journalist for a magazine or something in public relations. Possibly advertising and marketing.

Missionary

To invent something and make enough money to not have to work at all.

To own and manage a sports bar/grill. To have a company of my own.

Wedding planner.

What are your strengths?

I'm a quick learner, charming, patient, and a good teacher.

My strengths are that I am intelligent, funny and honesty.

Hard worker, good people skills, good persuasive skills, funny, outgoing, easy to talk to, good with words.

Knowledge, common sense, friends and family,

Responsibility, Competition, and Individualization.

Social skills

Belief, Responsibility

Socialization skills

If you chose to volunteer somewhere, where would it be?

Big Brothers, big sisters

With kids somewhere

Big brother, big sister

Church camp

Who on campus would you like to interview in their field?

Dr. Neal, education

Sherron Collins (college basketball player)

An event planner

Someone in the journalism school

What is one thing you must have in your career/job?

With a social group

Cool people

The presence of great, friendly, and helpful coworkers.

Friendly people.

Appendix D**Demographic Survey**

Age

Gender

Year in School

Time of PRE 210 class and Instructor

Race/Ethnicity

Cell Phone Number

Email Address

Name

College ID number

Are you willing to participate in the research study?

Have you ever taken the Strong Interest Inventory or StrengthsQuest?

What is your current major?